

# SX6005

## 12-port Non-blocking Unmanaged 56Gb/s InfiniBand SDN Switch System

SX6005 switch system provides the highest performing fabric solution in a 1U half-width form factor by delivering up to 1.3Tb/s of non-blocking bandwidth with 170ns port-to-port latency.

### Scaling-Out Data Centers with Fourteen Data Rate (FDR) InfiniBand

Faster servers based on PCIe 3.0, combined with high-performance storage and applications that use increasingly complex computations, are causing data bandwidth requirements to spiral upward. As servers are deployed with next generation processors, embedded system environments and fast storage will need every last bit of bandwidth delivered with Mellanox's next generation of FDR InfiniBand high-speed, low port density smart switches.

### FDR

FDR InfiniBand technology moves from 8b/10b encoding to a more efficient 64/66 encoding while increasing the per lane signaling rate to 14Gb/s. Mellanox end-to-end systems can also take advantage of the efficiency of 64/66 encoding using Mellanox FDR-10 link speed supporting 20% more bandwidth over QDR using the same cables/connectors designed for 40 GbE.

### Sustained Network Performance

Built with Mellanox's 6th generation SwitchX<sup>®</sup>-2 InfiniBand switch device, the SX6005 provides up to twelve 56Gb/s full bi-directional bandwidth per port. The SX6005 is an ideal choice for smaller departmental or back-end clustering uses with high-performance needs, such as storage, data base and GPGPU clusters.

### Smart Switches for Smart Clusters

The SX6005 has no Field Replaceable Units (FRUs), this simplifies the usage and maintenance of the switch. All connectors and cables including the power connector are on the same side of the switch making it unnecessary to require access to the non-connector side of the switch. A unique rail mounting kit allows two SX6005 switches to be mounted side-by-side in the same 1U space while allowing the switches to be serviced independently using less rack space for redundant switch configurations.

The SX6005 supports reversible airflow making the design fit into data centers with different thermal designs.

### Building Efficient Clusters & Grids

The SX6005 is the industry's most cost-effective building block for embedded systems and storage with the need for a low port density switch. Whether looking at price-to-performance or energy-to-performance, the SX6005 offers superior performance, power and space reducing capital and operating expenses, providing the best return-on-investment.



## HIGHLIGHTS

### BENEFITS

- Software Defined Network (SDN) support
- Industry-leading, switch platform in performance, power, and density
- Designed for energy and cost savings
- Quick and easy setup and management
- Maximizes performance by removing fabric congestions

### KEY FEATURES

- 12 FDR (56Gb/s) ports in a 1U switch
- Up to 1.3Tb/s aggregate switching half-width capacity
- Compliant with IBTA 1.21 and 1.3
- FDR/FDR10 support for Forward Error Correction (FEC)
- Side-by-side mounting capability

## SPECIFICATIONS

### MELLANOX SX6005

- 19" rack mountable chassis, 1U
- 12 QSFP non blocking ports with aggregate data throughput up to 1.344 Tb/s (FDR)
- Port-to-port latency 170ns

### SWITCH SPECIFICATIONS

- Compliant with IBTA 1.21 and 1.3
- 9 virtual lanes: 8 data + 1 management
- 256 to 4Kbyte MTU
- 4X48K entry linear forwarding data base

### MANAGEMENT PORTS

- I2C (RJ45)

### CONNECTORS AND CABLING

- QSFP connectors
- Passive copper or active fiber cables
- Fiber media adapters\*

### INDICATORS

- Per port status LED Link, Activity
- System status LEDs: System, fans, power supplies
- Port Error LED
- Unit ID LED\*

### PHYSICAL CHARACTERISTICS

- Dimensions: 1.72"H x 7.9"W x 15.7"D
- Weight: TBD

### POWER SUPPLY

- Input range: 100 - 240VAC
- Frequency: 50-60Hz, single phase AC

### COOLING

- Front-to-rear or rear-to-front cooling option

### POWER CONSUMPTION

- FDR - Typical power consumption:
- Passive cable: 110W
  - Active cable: 137W

## COMPLIANCE

### SAFETY

- US/Canada: cTUVus
- EU: IEC60950
- International: CB
- Russia: GOST-R
- Argentina: S-mark

### POWER SUPPLIES

- China CCC
- Korea KCC

### EMC (EMISSIONS)

- USA: FCC, Class A
- Canada: ICES, Class A
- EU: EN55022, Class A
- EU: EN55024, Class A
- EU: EN61000-3-2, Class A
- EU: EN61000-3-3, Class A
- Japan: VCCI, Class A
- Australia: C-TICK

### ENVIRONMENTAL

- EU: IEC 60068-2-64: Random Vibration
- EU: IEC 60068-2-29: Shocks, Type I / II
- EU: IEC 60068-2-32: Fall Test

### OPERATING CONDITIONS

- Operating 0°C to 45°C,  
Non Operating -40°C to 70°C
- Humidity: Operating 5% to 95%,
- Altitude: Operating -60 to 2000m,

### ACOUSTIC

- ISO 7779
- ETS 300 753

### OTHERS

- RoHS-6 compliant
- Rack-mountable, 1U
- 1-year warranty

Ordering Part Number	Description
MSX6005F-1BFS**	SwitchX®-2-based 12-port QSFP FDR 1U unmanaged InfiniBand switch system with a non-blocking switching capacity of 1.3Tb/s. 1PS, Short depth, Forward airflow, RoHS-6
MSX6005F-1BRS**	SwitchX®-2-based 12-port QSFP FDR 1U unmanaged InfiniBand switch system with a non-blocking switching capacity of 1.3Tb/s. 1PS, Short depth, Reverse airflow, RoHS-6
MSX6005T-1BFS**	SwitchX®-2-based 12-port QSFP FDR10 1U unmanaged InfiniBand switch system with a non-blocking switching capacity of 960Mb/s. 1PS, Short depth, Forward airflow, RoHS-6
MSX6005T-1BRS**	SwitchX®-2-based 12-port QSFP FDR10 1U unmanaged InfiniBand switch system with a non-blocking switching capacity of 960Mb/s. 1PS, Short depth, Reverse airflow, RoHS-6

\* Available in future release

\*\* Product availability: July 2013

Image depicts sample product only; actual product may differ.



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